7. City of El Mirage

The City of El Mirage is a residential community 16 miles northwest of Phoenix in Maricopa County. Although traditionally a farm community, currently El Mirage is developing its economic potential while maintaining a pleasant small town environment. Agriculture continues to employ many El Mirage residents, but considerable employment is also found in the construction and service sectors. The City of El Mirage MPA is located north of Northern Avenue, west of the Agua Fria River, east of Dysart Road, and south of Greenway Road.

According to the ADWR Annual Water Withdrawal and Use Report, in the City of El Mirage in 1997, a total of 2534 af of groundwater were pumped and delivered. Of that total, 109 af has been delivered to other users; leaving 2425 af of water to be delivered to the City of El Mirage.

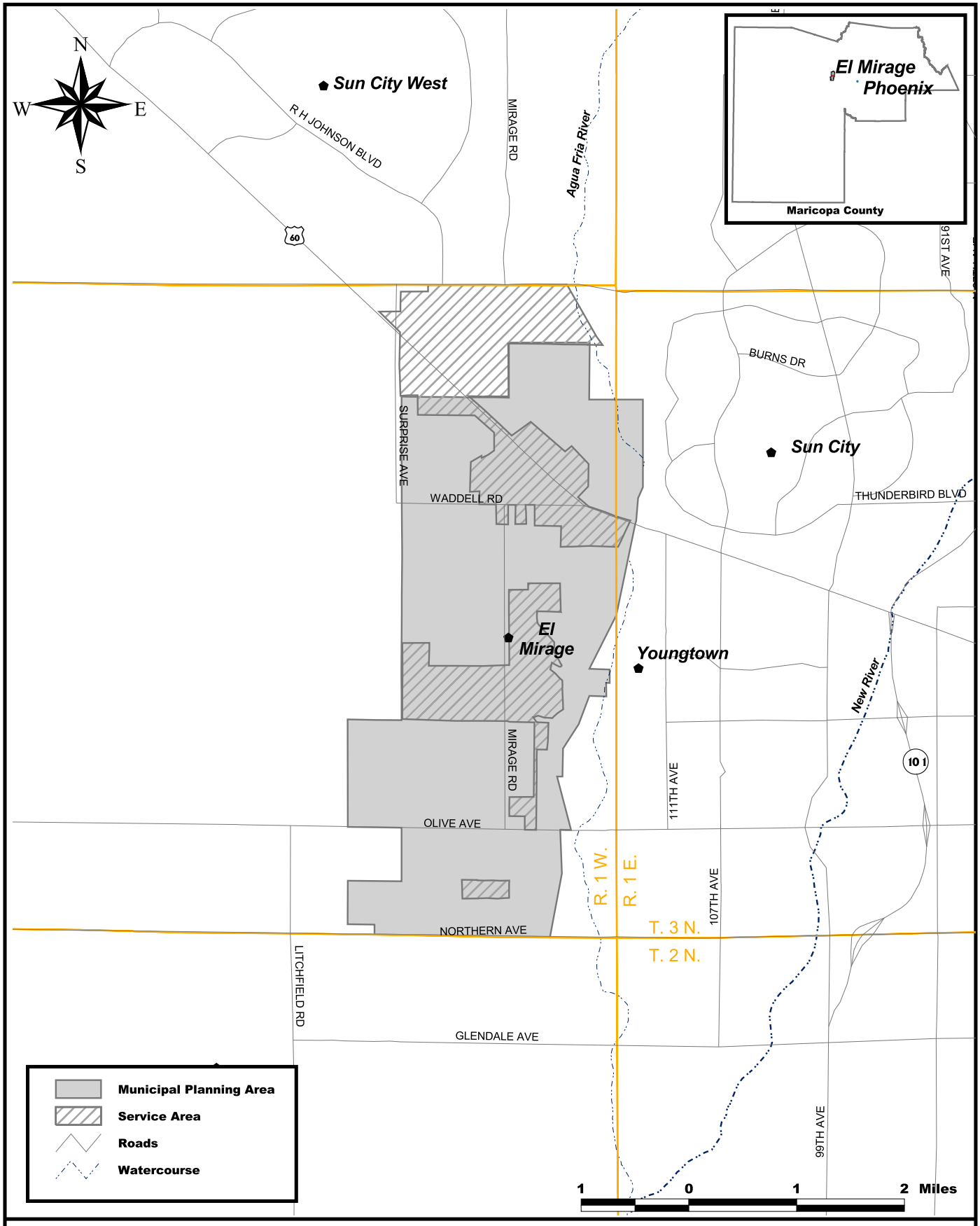
A. Plans to Take and Use CAP Water

The City of El Mirage currently has no subcontract for CAP water. Under the Settlement Alternative, El Mirage would receive 508 af of CAP water. That CAP water would be delivered for a 50-year contract period (i.e., from 2001-2051). The CAP water would be used to supplement both current and projected water supply demands over the next 50 years and would help reduce the continuing dependence on pumping groundwater from an overdrafted groundwater system. Table L-M&I-39 outlines the proposed allocations by alternative.

Table L-M&I-39
CAP Allocation Draft EIS
City of El Mirage – Proposed CAP Allocation

Alternative	Allocation (in afa)	Priority
Settlement Alternative	508	M&I
No Action	0	-
Non-Settlement Alternative 1	508	M&I
Non-Settlement Alternative 2	0	-
Non-Settlement Alternative 3A	0	-
Non-Settlement Alternative 3B	556	NIA
Existing CAP Allocation	-	-

Figure L-M&I-20 shows the service area and MPA for the City of El Mirage. The service area covers approximately 2,381 acres and the MPA covers approximately 6,556 acres. The City of El Mirage is considering wheeling its CAP water through the City of Peoria system. Specific plans and alignments are unknown at this time (Manna 2000).



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

June 2000

CAP Allocation Draft EIS
General Location Map
City of El Mirage

Figure #L-M&I-20

B. Population Projection

The population in 1985 for the City of El Mirage area was 9,000. The estimated 2001 population level is 5,846, and the estimated 2051 population level is 24,026.

C. Water Demand and Supply Quantities

As previously shown in Appendix C–M&I Sector Water Uses, it is estimated that water demand in the City of El Mirage MPA would increase from 1,020 af in year 2001 to 4,003 af in year 2051. The projected water uses both by water source and alternatives are provided below in Table L-M&I-40. Based on anticipated water demands, the CAP water which would be allocated under the Settlement Alternative would provide 50 percent and 13 percent of the current estimated water supply required for the City of El Mirage for the years 2001 and 2051, respectively.

Table L-M&I-40
CAP Allocation Draft EIS
City of El Mirage – Projected Water Use

Alternative	Annual CAP Deliveries		Groundwater		Effluent		CAGRD (Groundwater)		Total Demand	
	2001	2051	2001	2051	2001	2051	2001	2051	2001	2051
Settlement Alternative	0	508	460	460	560	560	0	2,475	1,020	4,003
No Action	0	0	460	460	560	560	0	2,983	1,020	4,003
Non-Settlement Alternative 1	0	508	460	460	560	560	0	2,475	1,020	4,003
Non-Settlement Alternative 2	0	0	460	460	560	560	0	2,983	1,020	4,003
Non-Settlement Alternative 3A	0	0	460	460	560	560	0	2,983	1,020	4,003
Non-Settlement Alternative 3B	0	508	460	460	560	560	0	2,475	1,020	4,003

It is estimated that the demand for water at the end of the CAP contract period would be approximately 4,003 af. For all alternatives, there is estimated to be no unmet demand. In the Settlement Alternative, Non-Settlement Alternative 1 and 3B, 508 afa of demand is met by the additional CAP allocation. Alternatively, this 508 afa of demand are met by CAGRD membership under the No Action Alternative and Non-Settlement Alternative 2 and 3A.

D. Environmental Effects

The following sections include a general description of existing conditions relating to land use, water resources and socioeconomics for each entity. The following summaries also include a description of the existing conditions and brief description of the impacts to biological and cultural resources that would result from construction of CAP delivery

facilities and conversion of desert and agricultural lands to urban uses.

1. Land Use

According to data from MAG, the land use designations in the City of El Mirage MPA in 1995 consisted of approximately 3,378 acres of agriculture, 1,076 acres of developed land, 1,460 acres of vacant land and 642 acres of water, including lake, rivers and canals. As described in the introduction to this appendix, the 1995 MAG categories were redefined into three new categories (i.e. agriculture, desert and urban). These 1995 data were also updated and adjusted based on reviews of the 1998 aerial photography and the field surveys that were completed to assess biological resources for this EIS. Table L-M&I-41 provides the projected acres of land within the City of El Mirage MPA that are agriculture, desert or urban and the number of acres expected to change from the existing category for the years 2001 and 2051.

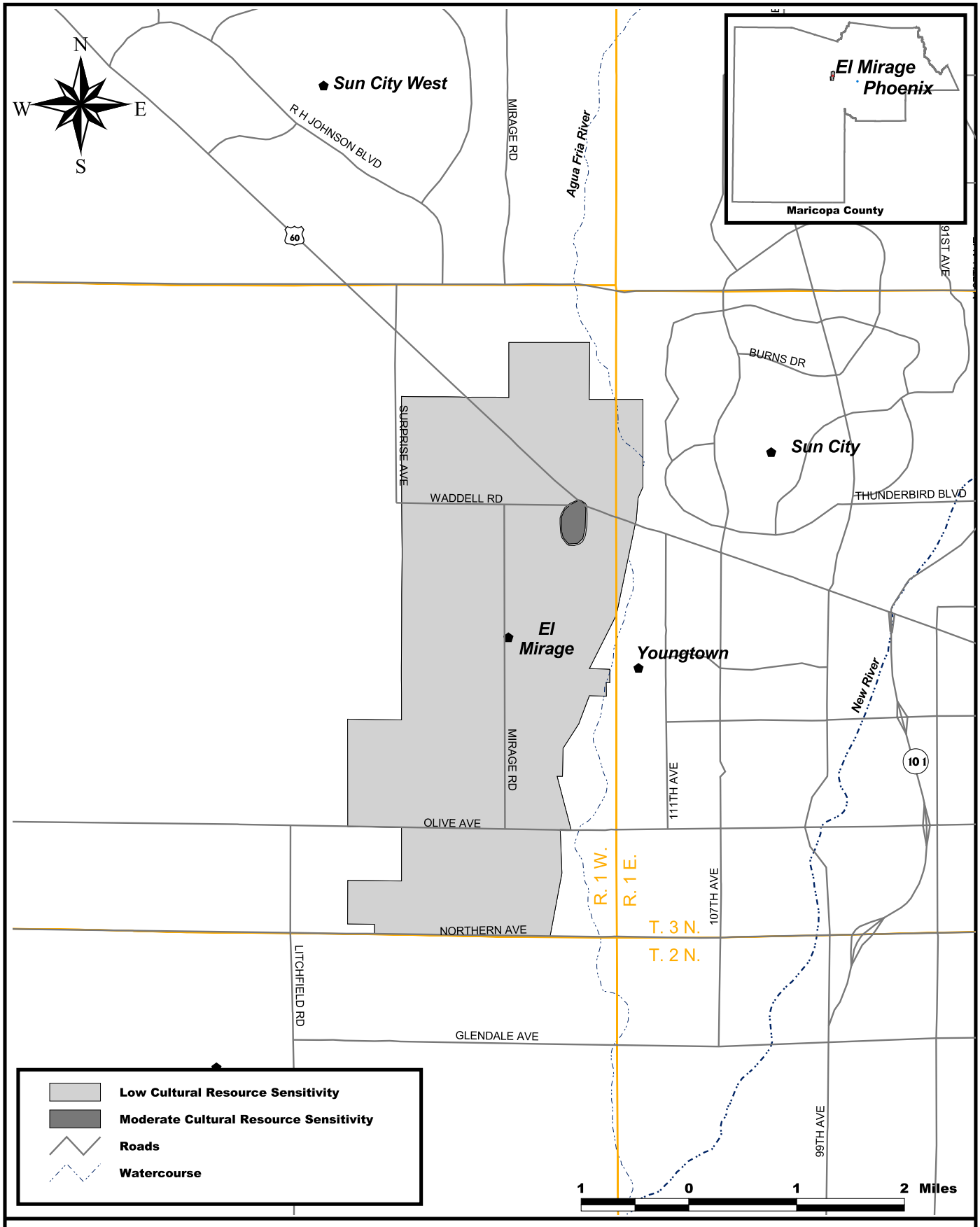
Table L-M&I-41
CAP Allocation Draft EIS
City of El Mirage– Projected Land Use Changes Within the MPA (in acres)

Alternative	Year	Agriculture	Agriculture Urbanized	Desert	Desert Urbanized	Urban	Changes to Urban Acreage
Settlement Alternative	2001	2,800	--	0	--	3,756	-
	2051	1,515	1,285	0	0	5,041	1,285
No Action	2001	2,800	--	0	--	3,756	-
	2051	1,515	1,285	0	0	5,041	1,285
Non-Settlement Alternative 1	2001	2,800	--	0	--	3,756	-
	2051	1,515	1,285	0	0	5,041	1,285
Non-Settlement Alternative 2	2001	2,800	--	0	--	3,756	-
	2051	1,515	1,285	0	0	5,041	1,285
Non-Settlement Alternative 3A	2001	2,800	--	0	--	3,756	-
	2051	1,515	1,285	0	0	5,041	1,285
Non-Settlement Alternative 3B	2001	2,800	--	0	--	3,756	-
	2051	1,515	1,285	0	0	5,041	1,285

2. Archaeological Resources

Only a few surveys, mostly linear, have taken place within the City of El Mirage MPA. Two sites were identified northwest of Youngtown; no other cultural resources are known. However, prehistoric cultural deposits are likely in the Agua Fria River floodplain. Historic sites related to transportation, commerce, homesteading, agriculture, and ranching also might be expected.

Cultural resource sensitivity areas in this entity are shown in Figure L-M&I-21. Based on the limited data used to generate the cultural sensitivity designations, the potential for



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

June 2000

CAP Allocation Draft EIS
Cultural Resources
City of El Mirage

Figure #L-M&I-21

cultural resource impacts in the City of El Mirage MPA is low. Mitigation of cultural resource impacts due to urban expansion would be determined by local jurisdictions and development of applicable permit requirements (such as the CWA Section 404 permit). Impacts on cultural resources due to future land use changes would be identical for each of the five alternatives. Mitigation for such impacts would be dependent on the requirements of the local jurisdiction. Once El Mirage's plans for taking delivery of CAP water are finalized, Reclamation would carry out additional cultural resources compliance as appropriate, prior to water delivery.

3. Biological Resources

Existing Habitats

Almost no natural habitat remains within the City of El Mirage MPA (elevation approximately 1,200 feet). Some Blue Paloverde/Desert Ironwood Association habitat, dominated by burrobush, creosote-bush, brittle-bush, bursage, and foothill paloverde, occurs along the banks of the Agua Fria River. However, the Agua Fria River has been channelized and is no longer perennial. The habitat zones located in the El Mirage MPA are shown on Figure L-M&I-22. Table L-M&I-42 provides the habitat acreages in the City of El Mirage MPA for the habitat zones described above.

TableL-M&I-42
CAP Allocation Draft EIS
City of El Mirage – Habitat Acreages

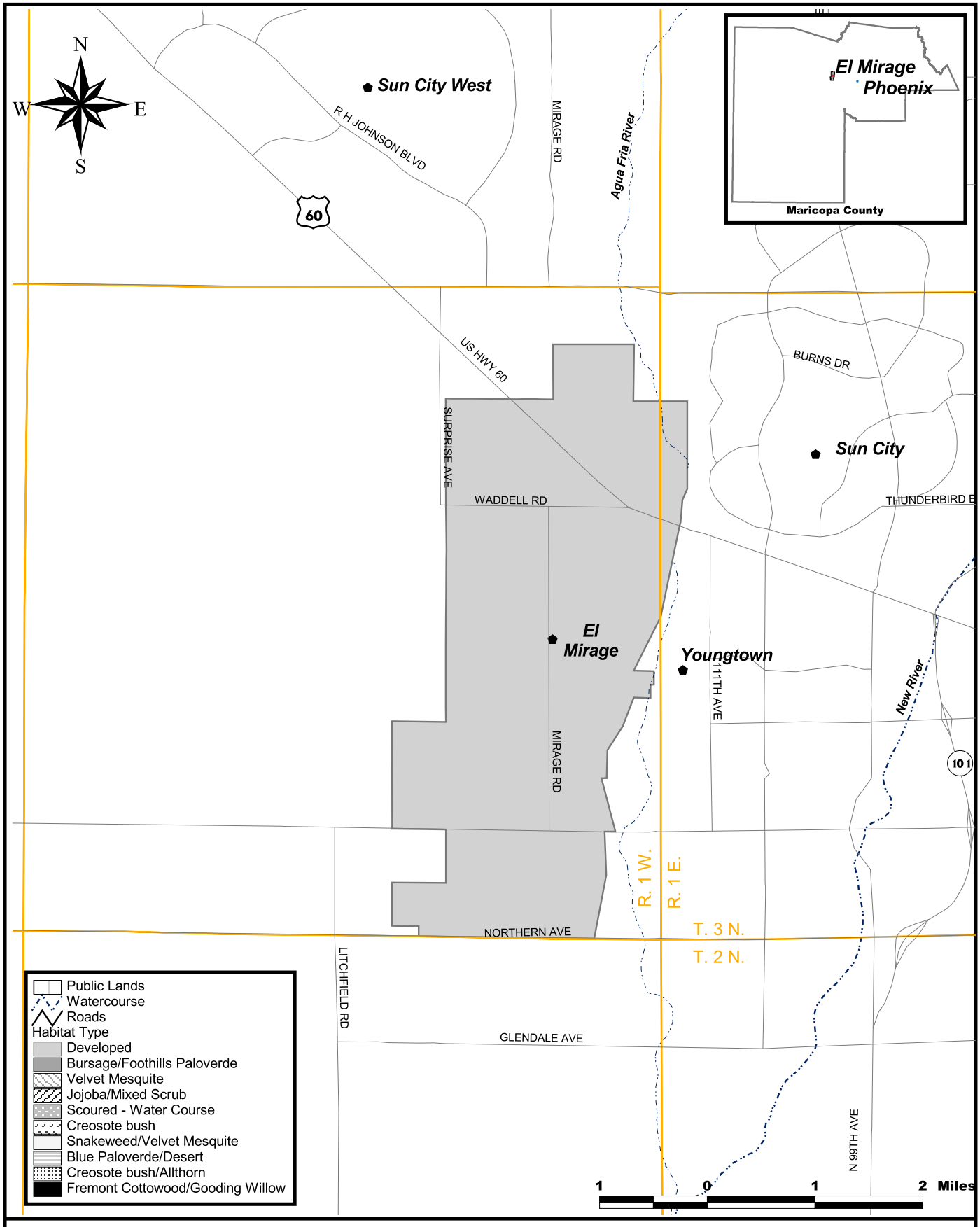
Vegetation Name	Acres
Developed	6,556
Scoured, Washes and Creekbeds	0
Total	**6,556**

Impacts to Biological Resources

Under the No Action Alternative, urban growth within the City of El Mirage MPA over the 50-year study period would result in no additional loss of natural habitat. However, approximately 1,285 acres of farmland would be urbanized. Any urbanization of the farmland would result in the creation of fallow fields for some undetermined length of time. Fallow agricultural fields in the area may be used by burrowing owls, a species protected under the MBTA. Individual developers who convert fallow lands for urban uses would be responsible for ensuring burrowing owls are removed prior to development. Failure to do so would be considered a violation of the MBTA. Under the action alternative, there is no difference in impacts from the No Action baseline. With regard to construction of CAP delivery facilities, Reclamation would carry out additional environmental review once plans are developed. At this time, significant impacts to biological resources are not anticipated, due to the probable use of the City of Peoria's system.

Potential T&E Species and Acres of Potential T&E Species Habitat

There is no potentially suitable habitat for T&E species within the City of El Mirage MPA.



U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

June 2000

CAP Allocation Draft EIS
Habitat Zones
City of El Mirage

Figure No. L-M&I-22

4. Water Resources

Demands in the City of El Mirage have historically been met by pumping groundwater from the underlying basin fill. In more recent years, CAP water has been used to meet a portion of the demands. The City of El Mirage is in an area of relatively intensive groundwater development, and substantial declines in groundwater levels have been experienced that have formed the Luke Cone groundwater level depression. These declines have resulted in subsidence in this area. The concentration of TDS in the underlying groundwater is generally below 500 ppm.

Estimated groundwater level impacts are summarized in Table L-M&I-43, which shows the estimated groundwater level change for the period from 2001-2051 as well as the groundwater level impacts or the difference between the change in groundwater levels for each alternative relative to the change for the No Action Alternative.

Under the No Action Alternative, groundwater levels would decline by about 136 feet from 2001 to 2051. This decline reflects the continued reliance on groundwater supplies in the vicinity of El Mirage. However, that decline is moderated by the influence of direct recharge of CAP water which would occur in the nearby Agua Fria Recharge Project and in future west-side recharge facilities. Increases in TDS concentrations could occur due to both the northward movement of poorer quality water from the south and due to lowering of groundwater levels in the vicinity of the Luke salt dome. The lower groundwater levels could also result in continued subsidence.

Groundwater levels under the Settlement and Non-Settlement Alternatives would also decline over the 2001 to 2051 period. These declines would be greater than the declines under the No Action Alternative, and could result in greater declines in groundwater quality and in additional subsidence relative to the No Action Alternative. The larger declines in groundwater levels primarily occur due to reduced direct recharge of CAP water under the Settlement and Non-Settlement Alternatives relative to the No Action Alternative.

Table L-M&I-43 CAP Allocation Draft EIS City of El Mirage–Groundwater Data Table		
Alternative	**West-side M&I ***	
	Estimated Groundwater Level Change from 2001-2051 (in Feet)	**Groundwater Level Impact** (in Feet)**
No Action	-136	--
Settlement Alternative	-198	-62
Non-Settlement Alternative 1	-147	-11
Non-Settlement Alternative 2	-157	-21
Non-Settlement Alternative 3A	-185	-49
Non-Settlement Alternative 3B	-172	-36

*Values correspond to the West-side sub-area, as discussed in Appendix I.
** Computed by subtracting the estimated groundwater decline from 2001 to 2051 for the No Action Alternative from the estimated change in groundwater level for the same period for the alternative under consideration. The estimated impact is considered to be more accurate than the estimated decline in groundwater levels.

5. Socioeconomic

The same population growth is supported under all alternatives, including the No Action Alternative. However, the cost of providing water may vary by alternative. Costs were estimated, on a per af basis, providing the proposed allocations and, in their absence, alternative water supplies. The alternative water supplies include joining the CAGRD and, if needed, treating and reusing effluent. The difference in cost for this small increment of the City of El Mirage's total water supply is considered insignificant. It should be noted that the increment of demand met by the proposed CAP allocation is approximately 12.7 percent of the total year 2051 demand for the City of El Mirage.

Table L-M&I-44 CAP Allocation Draft EIS City of El Mirage –Cost of Potable Water for Additional Allocation Increment		
Alternative	**Cost of Water (per af)**	**Water Source**
Settlement Alternative	154[a]	CAP Allocation
No Action	272 – 280[b]	CAGRD
Non-Settlement Alternative 1	154[a]	CAP Allocation
Non-Settlement Alternative 2	272 – 280[b]	CAGRD
Non-Settlement Alternative 3A	272 – 280[b]	CAGRD
Non-Settlement Alternative 3B	154[a]	CAP Allocation

Notes:
a. Estimated average unit cost in year 2000 dollars.
b. Estimated range of unit costs in year 2000 dollars. Range is due to estimated change in groundwater pumping lifts during study period and does not include wellhead treatment costs.